

## 202206UECM34630E2b

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<b>Started on</b>	Thursday, 4 August 2022, 08:01 AM
<b>Completed on</b>	Thursday, 4 August 2022, 08:01 AM
<b>Time taken</b>	6 secs
<b>Grade</b>	0 out of a maximum of 10 (0%)

1

Marks: 1

For a zero-modified ETNB distribution, you are given: (i)  $p_1 = 0.703907$ , (ii)  $p_2 = 0.042825$  and  $p_3 = 0.006431$ . Determine the probability of 0. \_\_\_\_\_

Answer:

[Make comment or override grade](#)

Incorrect

Correct answer: 0.245216

Marks for this submission: 0/1.

2

Marks: 1

Suppose  $S$  is a compound frequency distribution with primary and secondary distributions  $N_1$  and  $N_2$ , respectively.

$N_1$  and  $N_2$  are Poisson with parameters

$\lambda_1 = 7.3$  and  $\lambda_2 = 2.5$ , respectively.

Find  $1000P(S = 2)$ . \_\_\_\_\_

Answer:

[Make comment or override grade](#)

Incorrect

Correct answer: 3.683269

Marks for this submission: 0/1.

3

Marks: 1

Suppose the probability generating function (pgf) of the primary distribution is

$$P(z) = e^{5.2(z-1)}$$

and the pgf of the secondary distribution is

$$P(z) = [1 - \beta(z-1)]^{-1},$$

and the probability of no claims equals 0.75. Calculate  $1000\beta$ . \_\_\_\_\_

Answer:

[Make comment or override grade](#)

Incorrect

Correct answer: 58.563407

Marks for this submission: 0/1.

4

Marks: 1

Let losses occur following a frequency distribution with

- $P(N = 1) = 0.75$  and
- $P(N = 2) = 0.25$ .

Suppose a deductible is imposed such that the probability of a payment resulting from a loss is now 0.74 rather than 1. Determine the probability that the number of payments made is one times 1000. [i.e.  $1000P(N^P = 1)$ ]. \_\_\_\_\_

Answer:

[Make comment or override grade](#)

Incorrect

Correct answer: 651.2

Marks for this submission: 0/1.

5

Marks: 1

The number of losses follows a Binomial distribution with  $m = 34$  and  $q = 0.38$ . Loss sizes follow an inverse exponential distribution with  $\theta = 120$ . Let  $N$  be the number of losses for amount less than 240. Determine the standard deviation of  $N$ . \_\_\_\_\_

Answer:

[Make comment or override grade](#)

Incorrect

Correct answer: 2.455654

Marks for this submission: 0/1.

6

Marks: 1

Let losses occur following a zero modified binomial distribution with  $q = 0.75$ ,  $m = 3$  and  $p_0^M = 0.70$ . Suppose a deductible is imposed such that the probability of a payment resulting from a loss is now 0.88 rather than 1. Determine the variance of the number of payments made. \_\_\_\_\_

Answer:

[Make comment or override grade](#)

Incorrect

Correct answer: 1.035888

Marks for this submission: 0/1.

7

Marks: 1

Aggregate claim frequency for an employee dental coverage covering 20 individuals follows a negative binomial distribution with mean 8 and variance 16. Loss size has an exponential distribution with mean 370. The group expands to 75 individuals and a deductible of 111 is imposed. Calculate the probability of 2 or more claims from the group after these revisions times 1000. \_\_\_\_\_

Answer:

[Make comment or override grade](#)

Incorrect

Correct answer: 999.999175

Marks for this submission: 0/1.

8

Marks: 1

For an insurance coverage, you are given:

- Claim frequency ( $N$ ), before application of deductibles, follows a distribution with probability generating function (pgf)  
$$P_N(z) = 0.35 + 0.65[1 + 0.14(z-1)]^8 / (1 - 0.86^8)$$
- Claim size ( $X$ ), before application of deductibles, follows a distribution with pgf  
$$P_X(z) = [1 - 8(z-1)]^{0.3} \cdot 9^{0.3} / [1 - 9^{0.3}]$$
- Claim frequency and claim size are independent.
- There is a deductible of 3 per loss.

Calculate the variance of the number of payments. \_\_\_\_\_

Answer:

[Make comment or override grade](#)

Incorrect

Correct answer: 0.194288

Marks for this submission: 0/1.

9 

Marks: 2

Click the following link to answer the questions:

[https://docs.google.com/forms/d/e/1FAIpQLSfRUvV1wYI20DIcNLV8ceGzZ3KhxUIOBODMYAuqigllzVCYPA/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLSfRUvV1wYI20DIcNLV8ceGzZ3KhxUIOBODMYAuqigllzVCYPA/viewform?usp=sf_link)

Then answer 1 here after submitting the form.

[Note: In order to enter the google form, you must make sure that you login to UTAR account. If you see "You need permission", this means that you are not login to UTAR account, switch to UTAR account] \_\_\_\_\_

Answer:

[Make comment or override grade](#)

Incorrect

Correct answer: 1

Marks for this submission: 0/2.

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